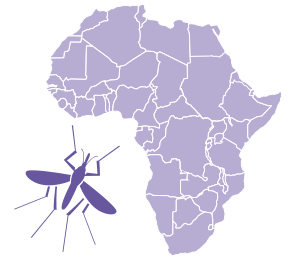


Malaria *and* Pregnancy



Guidelines for Prevention and Treatment



Several factors complicate the prevention and treatment of malaria in pregnancy. Economic constraints and inadequate health care infrastructures prevail in many countries where malaria is widespread. Many people simply cannot afford drugs and prenatal care. Compliance with drug regimens is low when women are afraid of potential side effects and lack access to regular prenatal care. Poor nutrition compromises a woman's ability to stave off the effects of malaria. Finally, the growing prevalence of HIV infection hampers the ability of many women to overcome malaria.

At the same time, enormous strides in research have facilitated the identification of prevention and treatment guidelines. Scientists, policymakers, and those working on the ground with malaria control programs are far more knowledgeable now than some years ago about what works and what does not, and new methods are continuously discovered. Despite daunting challenges, many steps can be taken to enhance the prevention and treatment of malaria among pregnant women, as detailed below. Since social and economic conditions, malaria levels, and the accessibility of health care vary widely, guidelines must be adapted to particular areas and populations.

Approaches to prevention. Since 1986, the World Health Organization has recommended that pregnant women in areas where malaria is widespread be treated with anti-malarial drugs during their first visit to a prenatal clinic, with follow-up treatments during later visits. Drug regimens that require only intermittent doses (such as sulfadoxine-pyrimethamine (SP) at certain points throughout pregnancy) are more likely to be followed than those that require daily or weekly doses. Studies have already shown that two doses of SP during pregnancy can improve the health outcome for both mother and child. There is an ongoing need to develop simple, cost-effective drug regimens that can be administered both through formal health care services and, in those cases where none are available, by women themselves.

Illness and treatment. Importantly, many pregnant women with malarial infections in areas of high transmission have some immunity, and therefore do not exhibit symptoms of the disease. This means that many cases are often not diagnosed, which in turn makes the use of alternative approaches critical. Preventive treatment with SP, regardless of symptoms, is generally necessary for all pregnant women in such areas. In addition, the testing of blood to detect anemia can help reveal problems that are likely linked to malaria. All pregnant women in areas of both high and low transmission need prompt access to treatment for malaria if they become ill. The most common signs of malaria are fever, chills, joint pains, headaches, and anorexia. More severe cases also cause extreme weakness, dark urine, convulsions or behavior changes, difficulty breathing, anemia, and jaundice. Clinical diagnosis of malaria should be based on both the presence of such symptoms, as well as blood tests when possible. Greater vigilance on the part of health care workers is required.

HIV infection. HIV-positive women have compromised immune systems and are therefore less able to resist infection with malaria parasites than their HIV-negative peers. In addition, the negative effects of malaria in pregnancy (in particular low birthweight) are more severe among the babies of HIV-positive women. Women with HIV also require more extensive care, and some anti-malarial drug regimens may be rendered less effective in the presence of HIV. One way to address this problem is to adjust courses of treatment. For example, **research suggests that more than two doses of SP may be needed to alleviate the effects of malaria among pregnant HIV-positive women.** It is also important that collaboration between malaria control and HIV prevention programs and researchers be strengthened.

Drug regimens. In order to be effective, a drug treatment regimen should clear malaria parasites from the mother's blood and the placenta. To date, methods exist that accomplish this goal to varying degrees and guidelines for the treatment of acute malaria are available.

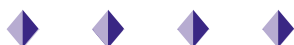
For pregnant women, SP is recommended particularly because of its contribution to alleviating the negative effects of malaria on pregnant women and their babies. Quinine is a longstanding, effective treatment for women with severe malaria during pregnancy. (Excessive doses of quinine must be avoided, as they can be toxic for the fetus.) A wide range of drugs, as well as oxygen and blood transfusions, can be used to treat problems related to malaria, such as convulsions, anemia, and respiratory difficulties.

Additional strategies. A promising prevention strategy is the use of insecticide-treated bed nets by pregnant women, particularly in areas where malaria outbreaks are seasonal and relatively predictable.

Research into non-drug strategies to help prevent and treat malaria is critical, particularly in the face of growing drug resistance. Studies indicate that the use of micronutrient supplements and other substances can mitigate some of the effects of malaria in pregnancy, and may help support the efficacy of drug treatment.

Targeting groups. A wide range of approaches can contribute to preventing and treating malaria in pregnancy. For example, literacy programs could facilitate education on malaria prevention and treatment. Other development programs can help impoverished people purchase bed nets and drugs and seek health care.

More specifically, studies have underscored the fact that women in their first pregnancy are at greater risk of contracting malaria than women who have had two or more pregnancies. In addition, first-born babies tend to suffer more from the effects of malaria in pregnancy than later children. Since women pregnant for the first time tend to be young, effort should be made to reach adolescents with information on health and malaria and to ensure that they receive adequate care.



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